ABSTRACT

A fuel cell system includes a fuel cell that is subjected to a purge operation of supplying an inert gas to an anode and/or cathode upon shut-down of the fuel cell. The differential pressure $\triangle P$ is defined as $\triangle P = Pa - Pc$ where Pa is the pressure in an inlet-side flow path leading to the anode and Pc is the pressure in an inlet-side flow path leading to the cathode. The differential pressure during the purge operation is controlled such that the differential pressure during operation $\triangle Po$ and the differential pressure during the purge operation $\triangle Pp$ satisfy the relation: $0 < \triangle Po \times \triangle Pp$. This makes it possible to reduce the stress exerted on a solid electrolyte membrane and improve the long-term reliability of the fuel cell.